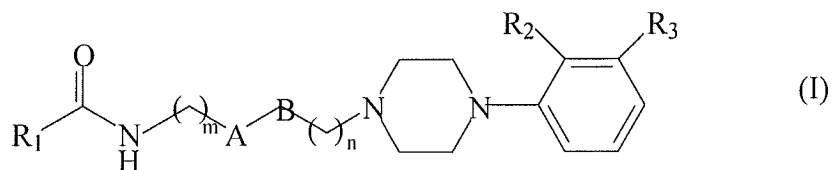


**AMENDMENTS TO THE CLAIMS**

1. (Original) A compound having the formula



wherein

A is cis or trans -CH=CH-, -C≡C-, or cyclohexyl;

B is cis or trans -CH=CH- or absent;

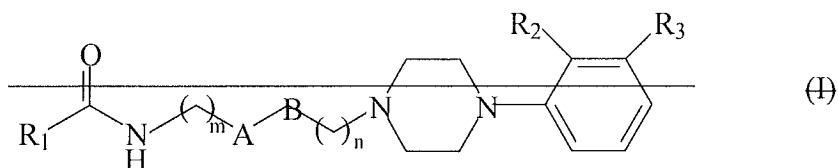
R<sub>1</sub> represents an aromatic substituent which may contain a heteroatom and is a single ring or multiple rings that are linked covalently, or that are linked to a common group, wherein R<sub>1</sub> is optionally substituted on one or more rings, wherein said substituents are selected from the group consisting of: hydrogen, halogen, amino, nitro, hydroxyl, alkoxy, alkyl, acyl and pyridyl, and said substitution may occur at any of the ortho, meta, or para positions;

R<sub>2</sub> and R<sub>3</sub> may be independently hydrogen or a halogen, or R<sub>2</sub> alone may be C<sub>1</sub>, C<sub>2</sub>, or C<sub>3</sub> alkoxy;

m is 1 or 2; and

n is 0, 1, or 2.

2. (Currently amended) A compound according to claim 1 wherein having the formula



wherein

A is cis or trans -CH=CH-, -C≡C-, or cyclohexyl;

B is cis or trans -CH=CH- or absent;

R<sub>1</sub> represents an optionally substituted phenyl group, wherein said substituents are selected from the group consisting of: hydrogen, halogen, amino, nitro, hydroxyl, alkoxy, alkyl, acyl and pyridyl, and said substitution may occur at any of the ortho, meta, or para positions, or R<sub>1</sub> represents a heteroaryl group, with the exception that R<sub>1</sub> is not triazole or thiadiazole or benzisoxazole or benzothiazole;

R<sub>2</sub> and R<sub>3</sub> may be independently hydrogen or a halogen, or R<sub>2</sub> alone may be C<sub>1</sub>, C<sub>2</sub>, or C<sub>3</sub> alkoxy;

m is 1 or 2; and

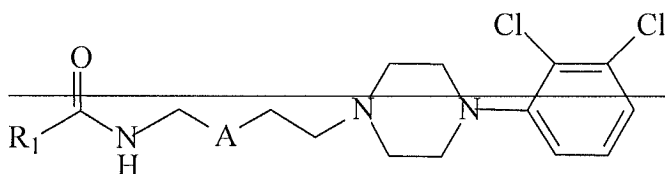
n is 0, 1, or 2.

3. (Original) The compound of claim 1, wherein B is absent, R<sub>2</sub> and R<sub>3</sub> are both halogen, m is 1 and n is 1.

4. (Original) The compound of claim 1, wherein B is absent, R<sub>2</sub> is lower alkoxy, R<sub>3</sub> is H, m is 1 and n is 1.

5. (Original) The compound of claim 1, wherein R<sub>1</sub> is phenyl substituted by a halogen, an amino group, a nitro group, a methoxy group, or pyridyl group.

6. (Currently amended) A compound according to claim 1 having the formula:



wherein

B is absent;

m = 1;

n = 2;

A is cis or trans -CH=CH-, -C≡C-, or cyclohexyl; and

R<sub>1</sub> represents an optionally substituted phenyl group, wherein said substituents are selected from the group consisting of: hydrogen, halogen, amino, nitro, hydroxyl, alkoxy, alkyl, acyl and pyridyl, and said substitution may occur at any of the ortho, meta, or para positions, or R<sub>1</sub> represents a heteroaromatic ring, with the exception that R<sub>1</sub> is not triazole or thiadiazole; and  
R<sub>2</sub> and R<sub>3</sub> are both chloro.

7. (Original) A method of treating cocaine abuse in a subject, comprising the steps of:  
administering to the subject an amount of a compound of claim 1 effective to inhibit binding of dopamine to a dopamine D3 receptor in the brain of said subject.

8. (Original) A method for selectively imaging dopamine D3 receptor in the central nervous system of a subject, comprising:

- (a) administering a radioactively labeled compound of claim 1 to the subject; and
- (b) detecting the binding of that compound to dopamine D3 receptors in the central

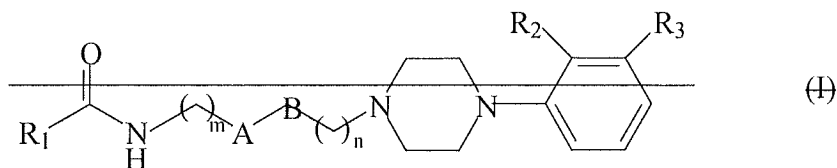
nervous system of the subject.

9. (Original) A method for detecting or monitoring a disease resulting from abnormal distribution and/or density of dopamine D3 receptor in the central nervous system of a subject, comprising:

- (a) administering to the subject a detectably labeled compound of claim 1;
- (b) detecting the binding of that compound to dopamine D3 receptor in the central nervous system tissue;
- (c) determining the distribution and/or density of the dopamine D3 receptor in the central nervous system tissue;
- (d) comparing the distribution and/or density obtained in (c) with the distribution and/or density of dopamine D3 receptor in a corresponding normal tissue; and
- (e) diagnosing a disease state by a difference in the distribution and/or density between the normal tissue and the subject tissue.

10. (Currently amended) The method of claim 8 ~~or 9~~, wherein the central nervous system tissue is brain tissue.

11. (Currently amended) A compound according to claim 1 ~~having the formula~~



wherein

A is cis or trans -CH=CH-, -C≡C-, or cyclohexyl;

B is cis or trans -CH=CH- or absent;

R<sub>1</sub> represents an aromatic substituent which may contain a heteroatom and is a single ring or multiple rings that are fused rings or are linked covalently, or that are linked to a common group, wherein R<sub>1</sub> is optionally substituted on one or more rings, wherein said substituents are selected from the group consisting of: hydrogen, halogen, amino, nitro, hydroxyl, alkoxy, alkyl, acyl and pyridyl, and said substitution may occur at any of the ortho, meta, or para positions, with the exception that R<sub>1</sub> is not triazole or thiadiazole or benzisoxazole or benzothiazole;

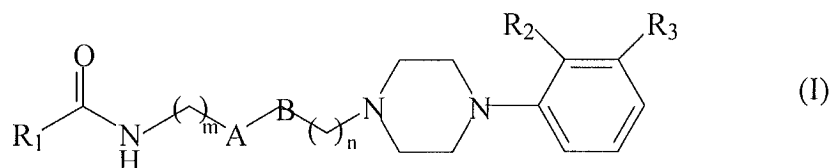
R<sub>2</sub> and R<sub>3</sub> may be independently hydrogen or a halogen, or R<sub>2</sub> alone may be C<sub>1</sub>, C<sub>2</sub>, or C<sub>3</sub> alkoxy;

m is 1 or 2; and

n is 0, 1, or 2.

12. (Original) The compound of claim 11, in which A is cyclohexyl.

13. (Original) A method of treating cocaine abuse in a subject, comprising the steps of:  
administering to the subject an amount of a compound having the formula



wherein

A is cis or trans -CH=CH-, -C≡C-, or cyclohexyl;

B is cis or trans -CH=CH- or absent;

R<sub>1</sub> represents an aromatic substituent which may contain a heteroatom and is a single ring or multiple rings that are fused rings or are linked covalently, or that are linked to a common group, wherein R<sub>1</sub> is optionally substituted on one or more rings, wherein said substituents are selected from the group consisting of: hydrogen, halogen, amino, nitro, hydroxyl, alkoxy, alkyl, acyl and pyridyl, and said substitution may occur at any of the ortho, meta, or para positions;

R<sub>2</sub> and R<sub>3</sub> may be independently hydrogen or a halogen, or R<sub>2</sub> alone may be C<sub>1</sub>, C<sub>2</sub>, or C<sub>3</sub> alkoxy;

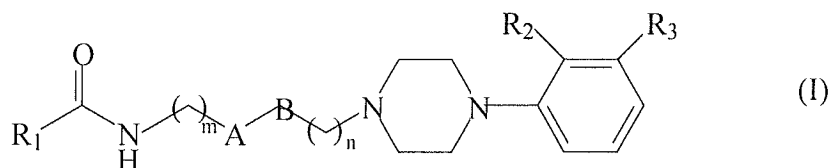
m is 1 or 2; and

n is 0, 1, or 2;

effective to inhibit binding of dopamine to a dopamine D3 receptor in the brain of said subject.

14. (Original) A method for selectively imaging dopamine D3 receptor in the central nervous system of a subject, comprising:

(a) administering a radioactively labeled compound having the formula



wherein

A is cis or trans -CH=CH-, -C≡C-, or cyclohexyl;

B is cis or trans -CH=CH- or absent;

R<sub>1</sub> represents an aromatic substituent which may contain a heteroatom and is a single ring or multiple rings that are fused rings or are linked covalently, or that are linked to a common group,

wherein  $R_1$  is optionally substituted on one or more rings, wherein said substituents are selected from the group consisting of: hydrogen, halogen, amino, nitro, hydroxyl, alkoxy, alkyl, acyl and pyridyl, and said substitution may occur at any of the ortho, meta, or para positions;

$R_2$  and  $R_3$  may be independently hydrogen or a halogen, or  $R_2$  alone may be  $C_1$ ,  $C_2$ , or  $C_3$  alkoxy;

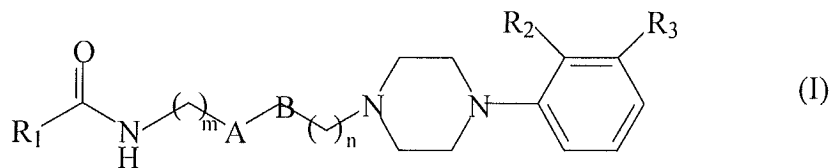
$m$  is 1 or 2; and

$n$  is 0, 1, or 2; to the subject; and

(b) detecting the binding of that compound to dopamine D3 receptors in the central nervous system of the subject.

15. (Original) A method for detecting or monitoring a disease resulting from abnormal distribution and/or density of dopamine D3 receptor in the central nervous system of a subject, comprising:

(a) administering to the subject a detectably labeled compound having the formula



wherein

A is cis or trans  $-CH=CH-$ ,  $-C\equiv C-$ , or cyclohexyl;

B is cis or trans  $-CH=CH-$  or absent;

$R_1$  represents an aromatic substituent which may contain a heteroatom and is a single ring or multiple rings that are fused rings or are linked covalently, or that are linked to a common group, wherein  $R_1$  is optionally substituted on one or more rings, wherein said substituents are selected

from the group consisting of: hydrogen, halogen, amino, nitro, hydroxyl, alkoxy, alkyl, acyl and pyridyl, and said substitution may occur at any of the ortho, meta, or para positions;

R<sub>2</sub> and R<sub>3</sub> may be independently hydrogen or a halogen, or R<sub>2</sub> alone may be C<sub>1</sub>, C<sub>2</sub>, or C<sub>3</sub> alkoxy;

m is 1 or 2; and

n is 0, 1, or 2;

(b) detecting the binding of that compound to dopamine D3 receptor in the central nervous system tissue;

(c) determining the distribution and/or density of the dopamine D3 receptor in the central nervous system tissue;

(d) comparing the distribution and/or density obtained in (c) with the distribution and/or density of dopamine D3 receptor in a corresponding normal tissue; and

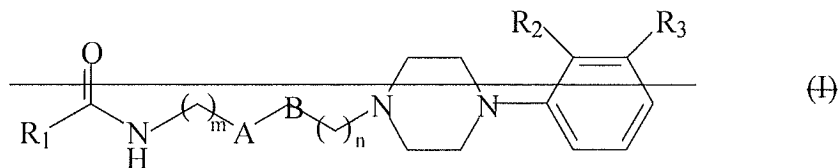
(e) diagnosing a disease state by a difference in the distribution and/or density between the normal tissue and the subject tissue.

16. (Currently amended) The method of claim 14-~~or 15~~, wherein the central nervous system tissue is brain tissue.

17. - 19. (Canceled)

20. (Currently amended) A compound according to claim 1, wherein ~~having the formula~~





wherein

A is cyclohexyl;

B is cis or trans -CH=CH- or absent;

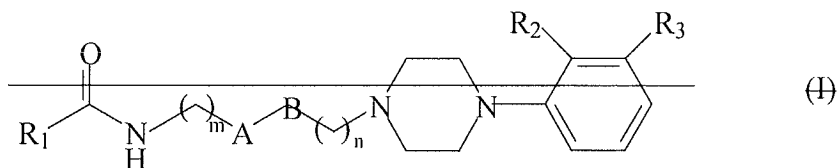
R<sub>1</sub> represents an aromatic substituent which may contain a heteroatom and is a single ring or multiple rings that are fused rings or are linked covalently, or that are linked to a common group, wherein R<sub>1</sub> is optionally substituted on one or more rings, wherein said substituents are selected from the group consisting of: hydrogen, halogen, amino, nitro, hydroxyl, alkoxy, alkyl, acyl and pyridyl, and said substitution may occur at any of the ortho, meta, or para positions;

R<sub>2</sub> and R<sub>3</sub> may be independently hydrogen or a halogen, or R<sub>2</sub> alone may be C<sub>1</sub>, C<sub>2</sub>, or C<sub>3</sub> alkoxy;

m is 1 or 2; and

n is 0, 1, or 2.

21. (Currently amended) A compound according to claim 1 ~~having the formula~~



wherein

A is cis or trans -CH=CH-, -C≡C-, or cyclohexyl;

B is cis or trans -CH=CH- or absent;

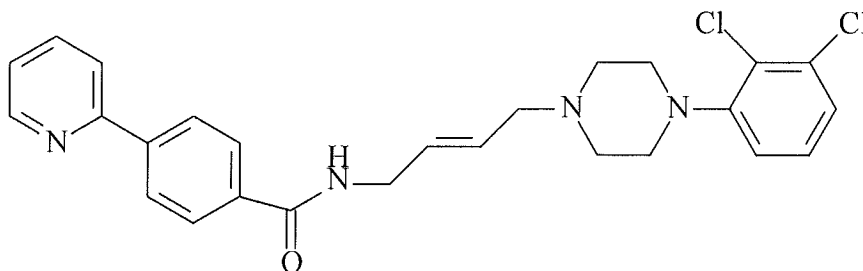
R<sub>1</sub> represents an aromatic substituent which may contain a heteroatom and is a single ring or multiple rings that are linked covalently, or that are linked to a common group, or is a group of three fused rings, wherein R<sub>1</sub> is optionally substituted on one or more rings, wherein said substituents are selected from the group consisting of: hydrogen, halogen, amino, nitro, hydroxyl, alkoxy, alkyl, acyl and pyridyl, and said substitution may occur at any of the ortho, meta, or para positions;

R<sub>2</sub> and R<sub>3</sub> may be independently hydrogen or a halogen, or R<sub>2</sub> alone may be C<sub>1</sub>, C<sub>2</sub>, or C<sub>3</sub> alkoxy;

m is 1 or 2; and

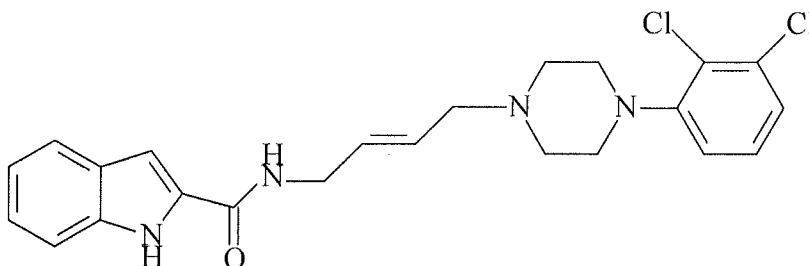
n is 0, 1, or 2.

22. (New) The compound of claim 1 that is:



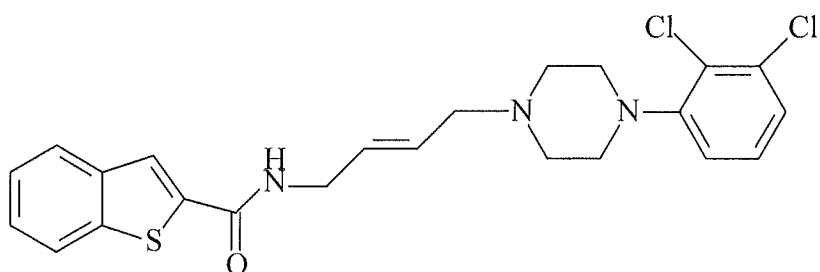
(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)-4-(pyridin-2-yl)benzamide.

23. (New) The compound of claim 1 that is:



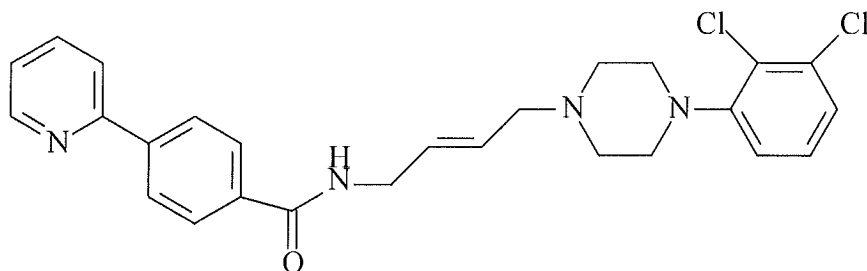
(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)-1*H*-indole-2-carboxamide.

24. (New) The compound of claim 1 that is:

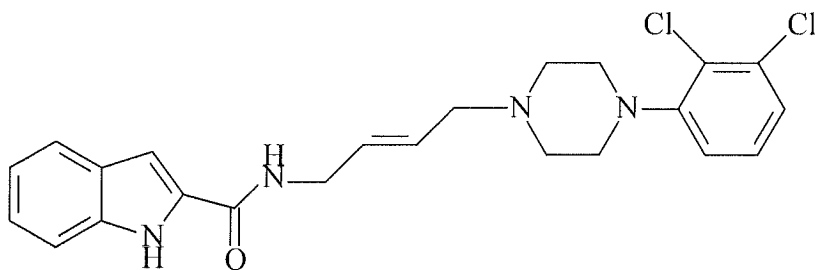


(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)benzo[b]thiophene-2-carboxamide.

25. (New) The method of claim 13 wherein the compound is selected from the group consisting of:

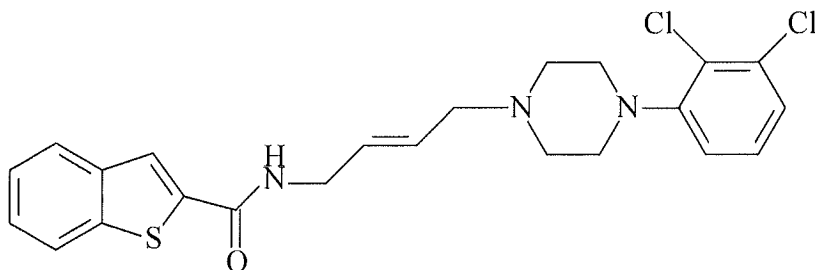


(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)-4-(pyridin-2-yl)benzamide;



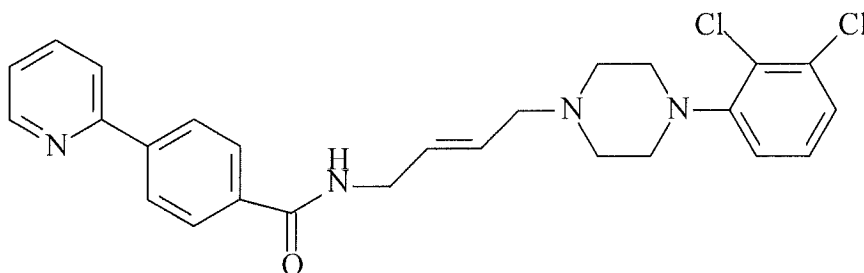
(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)-1*H*-indole-2-carboxamide;

and

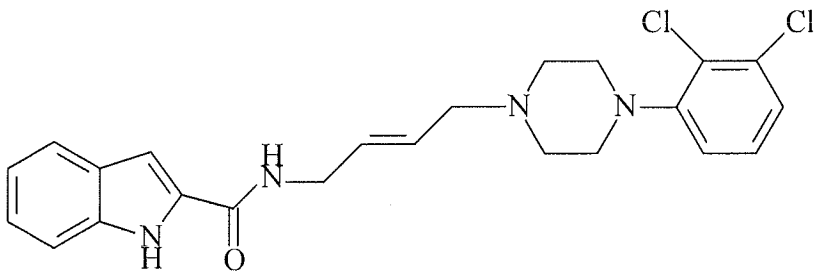


(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)benzo[b]thiophene-2-carboxamide.

26. (New) The method of claim 14 wherein the compound is selected from the group consisting of:

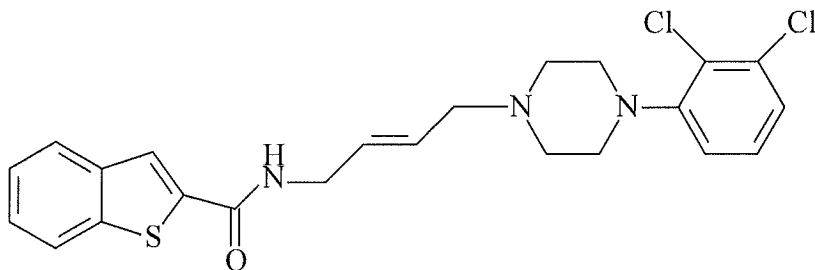


(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)-4-(pyridin-2-yl)benzamide;



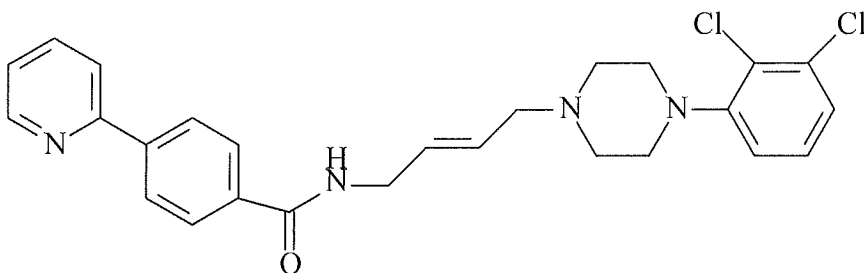
(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)-1*H*-indole-2-carboxamide;

and

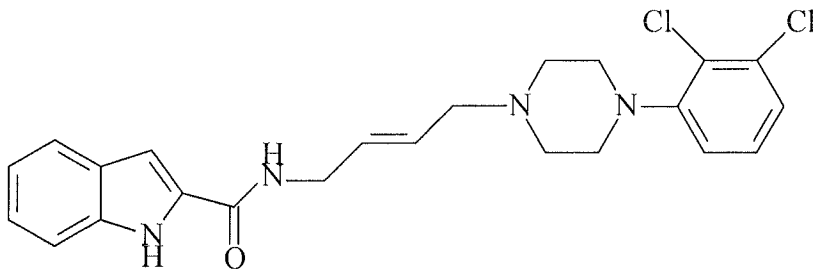


(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)benzo[b]thiophene-2-carboxamide.

27. (New) The method of claim 15 wherein the compound is selected from the group consisting of:

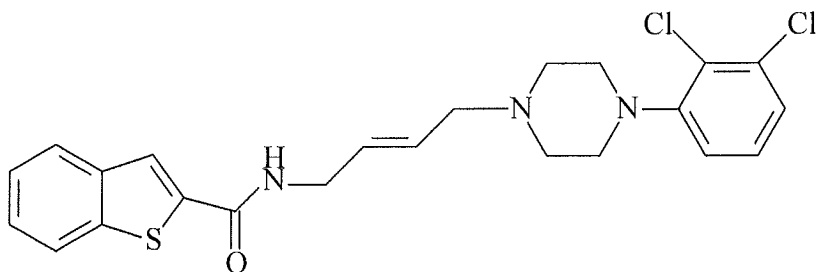


(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)-4-(pyridin-2-yl)benzamide;



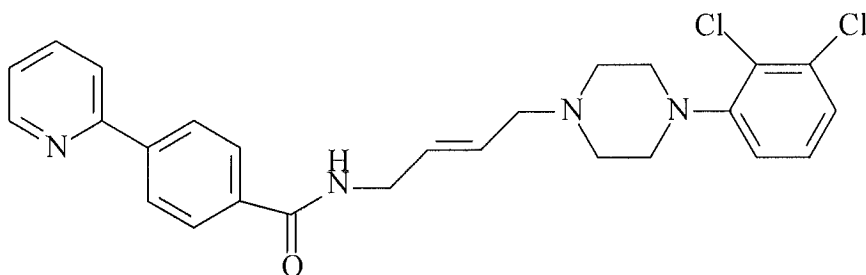
(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)-1*H*-indole-2-carboxamide;

and

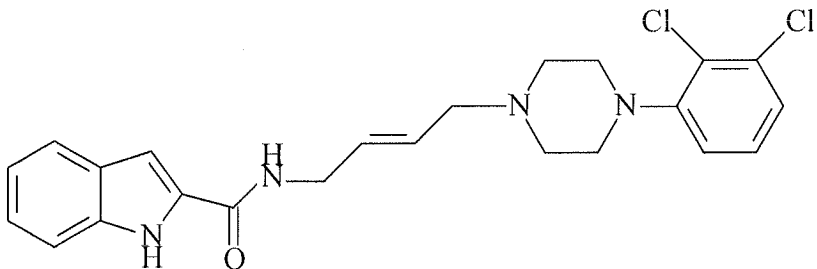


(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)benzo[b]thiophene-2-carboxamide.

28. (New) The method of claim 16 wherein the compound is selected from the group consisting of:

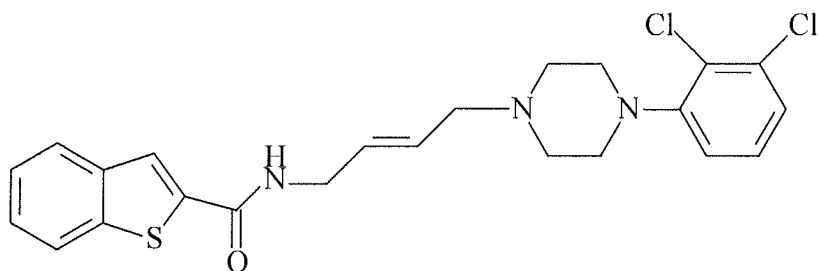


(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)-4-(pyridin-2-yl)benzamide;



(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)-1*H*-indole-2-carboxamide;

and



(E)-N-(4-(4-(2,3-dichlorophenyl)piperazin-1-yl)but-2-enyl)benzo[b]thiophene-2-carboxamide.

29. (New) The compound according to claim 1, wherein R<sub>1</sub> is indole.